

H. G. Dyar. 131-157.

Catalogue of described caterpillars
Blue Book.

Descriptions begun, September, 1882.

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131-157

BB/131 = 22

Spilargis calviniae (matured?) July 12, 1889

In one "fir tree". No caterpillars seen.

Head shagreened; color leaf green
a black band on each side preceded
by a yellowish shade. "Clippers" white.

Jaws black. Palpi whitish.

Body bright yellow green, lateral
oblique stripes (in joints 5-11) ~~the~~

last continued faintly in joint 12 to

the caudal ^{posterior} ~~canal~~ ^{lateral} ~~canary~~ yellow, ~~an~~

half velvety black, the color separated

by a fine white line. Anal plate

slightly yellow. The body and

covered by small black elevated spots.

Caudal horn pale blue but as thick

covered by confluent slightly elevated

black spots as to appear black.

Thoracic feet tibiae & tarsi black.

Femora white. Abdominal feet

with two black bands separated
by a yellow shade, the feet on
joints 10 have the upper black
band only a spot and the anal
feet have only a slight black
mark. Spiracles orange color
Annulets 4 at posterior part of each
seg. They were not seen till the
next morning early when the larva
was "ophrinxed" hard.

Rate of growth probably 2
BB132

Agraulis vanillae on passion flower
at Los Angeles Cal. Aug 2, 1889. (All sizes)
Egg $1\frac{1}{2}$ mm high, 1 mm in diam, flat at
base, nearly cylindrical but slightly
greater diameter in the middle, summit
rounded. Sides striated by about 15 long-
itudinal ribs crossed transversely by
many slight parallel creases, the summit
reticulated. Color pale yellow, uniform
as hatching approaches the color of the
larva is seen as a red band.

Newly hatched larva (Aug 4) Length 2.5 mm
Head nearly round, black & shining + hairy
Body much contracted between the
segments, pale yellowish testaceous
longitudinal rows of black spines
fine & appearing slightly clubbed. The
sac feet dark. Eat the egg shells
On joints 3, 4, 6, 8, 10 are large whitish
subdorsal spots & the cervical spot is
edged with white. ^{subd. band} ^{arising from elevated} ^{seg. space} greenish

As hatching? days.

has 2 long black spines ^{beset with bristles}

[Mature larva has much variation. Head, pale whitish orange with black bands 3 proceeding from each spine, 1 before, 1 on the eye, 1 toward the body. While below on the side of the head is a half band. ^{bands sometimes brown} On each joint are 6 spines ⁵⁻¹² beset with bristles but on joints 2-4 there is a different arrangement. On joint 2 one 2 spine in the ^{space} ~~subdorsal~~ ^{subdorsal}. On 3 one 4 2 anteriorly, subdorsal & 2 post. ^{stig. space} ~~subdorsal~~. Joint 4 has 2 subdorsal. Joint 13 has ^{the upper pair anteriorly} 4, the middle one being gone. Spin black. Body orange, with a dorsal band of blue slate color or purple and broad ^{lateral} ~~subdorsal~~ ^(occupies the stig. sp & subd. line) band, these varying in width. The orange appears in spots below the middle row of spines. A subventral white band, of varying width, sometimes obsolete. Spines black. Venter slate color shaded

with black, orange spots represent in the feet on joints 5, 6 & 11, 12.

Feet dull orange inwardly, black outwardly. Small white spot above the bases of the legs. Length about 35 mm.]

After 1st molt (Aug 8) Head & spines with their elevated bases shiny black. Spines as in mature larva. Head furnished with black bristles. Cervical spot represented by 2 complement black spots with bristles. Body pale orange, subdorsal band paler and greenish. Feet black outwardly ^{with black}.

[Chrysalis. suspended by the tail. Abd. furnished dorsally with slight elevation each preceded by an oblique black spot. Thorax posteriorly deeply excavate dorsally, anteriorly rounded in a wedge shaped protuberance which is cut perpendicularly in front. Top

of head flat, with some pointed pro-
trusions before the eyes. An angular
projection at base of wing cases and
the thorax ventrally at apex of
wing cases is much bulging, sharply
rounded and meeting the abdomen
almost at right angles. Color
ash gray & white much variegated,
the white appearing most distinctly
as a ventral band, stigmatal &
dorsal line on abdomen and on
the int. marg. of wing cases & on
top of dorsal process of thorax.

The depression of the thorax is shaded
with black as also the top of head
& some regular black lines occur
on the wing cases. [Duration 14 days]
After 2nd moult (Aug 11) As in the preceding
stage except the lateral purplish band
is present, covering the stigmatal

space and a subdorsal line. Cervical
spot represented by 2 redward black
spots with short spines. ^{Head} Spiracles, anal
plate & outside of feet black. The
body is light orange as in the mature
larva & the spines are the same
After 3rd moult (Aug 14) Marking, 2
mature larva (red spots not black,
no white stripe)
Length about 25 mm.

After 4th moult (Aug 18) Mature

BB/33

also willow

Spring of a kind of poplar in
granite valley, Aug 15, 1889.

Head ^{sub-triangular} pointed, obtusely pointed at
vertex, shagreened. Color green, a yellow
stripe from vertex to palpi. "Clippus"
tinged with pinkish, ^{dark black}. Body slightly
yellowish green, thickly covered
by small white spots, less numerous
on joint 13. A pale white subdorsal
line runs from the middle of joint 2
to joint 11, fading out at both ends.
Lateral oblique yellowish line
just before the spiracles, more
distinct posteriorly, on joints
10, 11 & 12 is a very distinct one, white
edged above by darker green
and continued to the caudal
horn which is pale whitish,
violet beneath at the base and

light blue above. Anal plates
tinged with yellowish at the
edges. Spiracles white with a
distinct brown oval edging.
Thoracic feet tinged with pinkish.

Length about 30 mm

"J" Aug 20 in the ground.

Pupa Dark mahogany red with
black shadings, cylindrical, and
parts markedly developed. Ac-
mester contracted basally & tipped
by a tapering spine.

dead

134

Springs on evening primrose in
Yosemite valley Aug. 15, 1899.
Head & cervical spot, ^{16 small plates} shiny olive
green, covered by small yellowish
spots. Palpi & mouth parts pale.
Body yellowish green, a yellow
subdorsal line partly interrupted
on each joint from 4 to 12 by an
rounded dark red spot. Above &
below each spot is a distinct black
spot, the upper ones in some species
continued & connected to form a
band. This is sprinkled with
yellow ^{dots} posteriorly to each red
spot. Sprinkles ^{light} pale red with a
yellowish line down the center &
surrounded by black mottlings -
caudal horn reddish orange
with elevated pale points

341213

Feet & vents greenish yellow
with some black streaks in the
subventral space
Length about 65 mm

Similar mottlings on joints 3 & 4
in the stigmatal line and in
12 & 13 in the subdorsal space

Deilephila lineata

135-

Egg of *Luminatus lorquini*? on willow
 at Yosemite Aug 17, 1889. Laid on the top
 of the leaf. Nearly spherical, contracted
 toward the flattened base, closely
 covered with ^{rounded} depressions & minutely
 pilose. Color blackish (towards hatchling)
After 2nd moult?? Head rough, slight
 vertical processes, dark brown, some of
 the roughnesses tipped with white.
 Body much roughened, with many
 small processes, the largest being
 dorsally on joints 2, 3, 4, 11, 12 & 13, on
 joint 13 are 2 pairs. The processes are
 also much roughened. Color
 dark brown a large white patch
 dorsally on 8 seg & the tops of some
 of the roughnesses before & after the
 patch. Others tipped with yellowish
 anteriorly dorsally & posteriorly

234 11-13

Laterally (joints 12 & 13)
 dead

136

See 311

Rhaphia? on Poplar Yosemite Aug 17, 39
 Head whitish green, partly ventral
 skin of joint 2. Body pale green
 with 2 transverse rows of small
 yellow dots on each segment
 the dots alternating, on joint 4 the
 posterior row are more closely set
 Joint 3 has a double dorsal process
 violet colored, edged by yellow and
 finely marked with black. On 5-
 9 & 12 are 2 spots similarly colored
 & connected posteriorly by a yellow
 line. A stigmatal row of small
 spots of same color, except on joint
 5. On 2, 3, & 4 the spots are elevated
 Feet of joint 13 with same color.
 Length 30 mm.

dead

R. frater var. *coloradensis*.

Copied
12/2/90
137

3 *Edemasia* on rock maple Yosemite
valley Cal. Aug 20, 1889. Head black
with a few short hairs. Cervical spot
bisected, black as are also the
anal plates. Body yellow with short
pale hairs; joint 5 has a slight
dorsal hump, palmar white orange
tinged & with 4 black elevated
spots, these being part of a transverse
row of 8 which each segment bears
joint 13 having a double row.
The rows are not in line, the 2
dorsal spots being placed anterior-
ly to the others. Faintly indi-
cated geminate subdorsal &
lateral brown lines. Thoracic
feet dark. Length 12 mm.

R Moults Aug 20 Head mahogany and
more or less shaded with black.

Lowne Keene Valley 27. July 12 1894
Stage I hds .5 mm. II 1.1 mm. tubercles with
large conical bases but no secondary ones
Furnished with short hair. Jaws black

Body yellow, a dorsal single &
subdorsal & lateral geminate
interrupted pale brown lines
Black spots as in previous stage
but more elevated, the dorsal
on the hump & on joints 3 & 4 the
subdorsal especially long.

There is also a slight hump on
joint 12 with 2 produced spots
(Spots in 4 rows 1 on dorsal line ② is
subdorsal ③ is lateral line ④ in
subventral space these last are
on each joint
plemented by 2 more below them)
The lines are obsolete beyond joint 11

& the arrangement of spots confused
Bisected, ^{elevated} cervical spot, feet & anal
plates black. Body with short hair
Venter pinkish between the legs
Anal feet elevated. Later as the

larva grows the gennate horn like
 become filled in with white and
 the hump on 5 has a decided rose
 tint, a ^{flaring} faint brown interrupted
 line appearing between the dorsal
 & subd. lines & bet. the subd. & lateral
 lines. Molt Aug 31 as before but
 black spots prolonged as blunt
 spines on joints 3 of the ^{subdorsal} ~~subdorsal~~
 lines are long, on 5 the subd. ^{next segment} ~~subd.~~ ^{next segmt} ~~subd.~~
 & on the rest the ~~subd.~~ are longer
 hump on 5 rose color, on 12, yellow
 lines black, the gennate lateral
 & ant dorsal white ^(in center) between, inter-
 rupted at humps ^(obsolete on 13) Anal feet yellow,
 black at base (wid elevated), dorsal
 line black ⁶⁻¹² bet. it & subd. interrupted
 fine line & another similar brown one
 bet subd & lat. (dead)

(Probably last molt)

Oedemiasia salicis

Corresponds
 well with
 ?? Hy. Edw.
 Desc.

Noctuid larva. Tollingales Cal,
 Sept 22, 1889. Dark brown above, a black
 dorsal stripe edged intersegmentally
 with pale yellow. Subdorsal inter-
 trich yellowish streaks, and the
 sides shaded with black. Sub-
 ventral space pale yellowish
 shaded with brown centrally with
 a stigmatal & subventral whitish
 line. Venter pale whitish with
 2 white lines interrupted by the
 feet. On each joint 2 black stigmatal
 spots in 2 alternating rows. Cervical
 spot large & black. Head pale
 reddish brown. Spiracles black,
 a number of short pale hairs on
 the head & body. Anal plate
 pale. (Head)

Zone 3 City Head Notations. One eye
jaws and 2 large spots on the side.

[illegible]

Rate of growth 2

(Spec 21) 140

3rd inst. out
Cov

Egg of *Pyrausta carye*! on Malva
Sep 22, 1889 at Los Angeles, Cal.

Egg. Laid on upper surface of leaf.

Base flattened, nearly cylindrical and
thicker in the middle the top quite
flat & rather abruptly rounded.

Longitudinal ribs ^{physically very small} throughout the

summit. Color green of a slightly
bluer tint than the leaves. Length 1 mm

Hatched larva ^{Sept 25} Apparently (a) Length 2 mm

no dorsal line, distinct

Mar 2. Oct 29 Apparently (a) Length 4 mm

Mar 3. Oct 3 = (a) Mouth 4 to 6 Head slightly

nodate. Bronzy black, with minute yellow

speckles & black hairs. Body purplish black

with small yellow spots. A geminate

lateral yellow line irregular & interrupted

and a series of ^{supra & sub.} stigmatal irregular spots

Mar 5 (Oct 10) Head bronzy black with elevated spots

3 hairs. Body black. Spots orange ~~and~~ ^{black} ~~mouth~~
black. Spots & hairs white and hairs
mountain. P. carye!

all over the leaf. The white hairs are very numerous on the underside of the leaf. The white hairs are very numerous on the underside of the leaf. The white hairs are very numerous on the underside of the leaf.

First stage! Spine a web on surface of leaf and

feet beneath its upper surface of leaf.

Length 2 mm Head, cervical spots, anal

spots, alternating row of ^{8?} black dots

per seg & short hairs all black

Body dark yellowish testaceous

Head with 2 processes, smooth & shining

[Mature] ^{Pearse} Head black covered with

many white hairs and on the vertex

about 6 orange elevated spots bearing

black hairs. Body ^{dark greenish} black

anotted, varying in intensity of shade

with many yellow or orange spots

forming irregular subdorsal, 2 lateral

anterior & sub-stigmatal bands and

or less distinct. Spine white with

white branches tipped by black hair

on 5-12 (dorsal, subd., lat., sub-stig)

None on 12, 3 & 4 have 4, 13 have 2

(Ordovician & sides nearly all black
with the orange spots. Spine black
Venter greenish with some black marks)

Body covered by many small papillae
producing about white hairs

Venter greenish, mottled with
black or brown. Length about 30 mm

Mont 8 Sept 23 Head black hairy. Body
purplish faintly mottled with yellowish

laterally and a geminate dorsal
yellowish line. Short spine bearing

black hair arranged as in mature
larva, black, but the dorsal & ventral

on joints 6, 8, 10 yellow. Length 7 mm
28 Black & spines black except dorsal

6, 8 & 10 which are orange at base, yellow
in center & black at ends. A stigmatal

geminate dorsal yellow line. Minute
yellow spots over the body. White & black hair

Length 15 mm.

Mont Oct 10 All black. Substigmatal
yellow. Minute yellow spots. Mature
white hairs & legs reddish. P. cardui

(Pupa depressed behind thorax, the
thoracic process short & pointed, ^{taken up anteriorly in a ridge}

ring cases prominent; abdominal
sags, small & quickly rounded,

crenate flattened & hooked & a
button & white silk. A pointed

elevation at each eye and the
base of the ring cases. 3 rows of

dorsal pointed elevations. Touched
with white, ^{on abd with 2 points a thorax} with 2 large & 2 small

white spots in depression behind thorax.
Color of pupa wood brown minute

mottled with whitish.) P. carye

hope
length of stages

Pyramis carye
" cardui

141

Heperid larva on Malva, Sept 22nd
 at Los Angeles, Cal. Head much
 larger than joint 2, slightly notched
 at vertex, minutely shagreened.
 Head & joint 2 black with
 a few short white hairs. Thoracic
 feet black. Body ^{last seg. tapering} pale green
 a faint geminate pale subd
 line. A darker dorsal
 line. Body densely covered with
 minute white ^{filiform} granulations.
 Abd. feet green. Length 15 mm
 (dead)

142

 of
 Oct 31

Eggs laid by some c-light moth
 Sept 23? 1889. Hatched Sept 25 and
 were given Malva. Hemispherical
 rounded toward ^{at} the base the vertex
 with a rounded depression. Fairly
 crossed vertically. Pale yellow.
 Hatched walks as though it will but
 not readily spin a thread. Head
 somewhat conical, black & shiny.
 Cervical spot & thoracic legs faintly
 blackish. Body pale yellow with
 black hair. Eat the under leaf
 of the leaf & rest there on the pad.
 Keep the body bent up in a closed
 loop & head touching the leaf.
 In walking have the last 3 pair legs
 up. Nov 2 Sept 28 Head whitish. Body
 green with a trans. row of black
 spots per seg. bearing black hairs.
 Head 12 legs 6 thoracic & last 3 pair

a subdorsal & stigmatal whitish line
joint 12 enlarged. When about to
moult out into straight on leaf

Moult 3 Oct 1 Head greenish with
minute black dots & black hairs ^{dark reddish}
Body green with white ^{large black center} pale spots
and indistinct longitudinal white

streaks, a narrow subdorsal and
broader stigmatal white line

On joint 5, 6, 8, 9 is a distinct black
spot in the subdorsal space. Body
with black hairs. ^{abd.} Legs only on 9, 10
and 13. Plumped. Length about 7 mm

Moult 4 Oct 4 Head green with minute
brown speckles and a few black hairs
Eyes & jaws brown also palpi. Legs as
before. Body green, a broad white
stigmatal line, a narrow subdorsal
and two more in subdorsal space also
white, the latter slightly wavy and
^{first broader than the 3rd and the}
^{upper}

interrupted. On each joint 2 rows of
white dots with black centers bearing
short black hairs. The rows alternate
on the middle joints. Thoracic feet
tinged with blackish. Other coxae
white. Length about 10 mm ^{with contortions} When
disturbed curl spirally & fall to ground.
At this moult eat whole leaf.

Moult 6 Oct 7 Head ^{sluicing} green, jaws brown,
palpi black. In some a black stripe
on side of head. Body dark green.
The lines as before, the stigmatal
ending sharply above but blended
ventrally. The elevated spots bearing
^{white} black hairs are whitish except three
suprastigmatal which still have
black centers. Genital spots and
anal plates dull pale green
^{spinules whitish with black gold}
Thoracic feet blackish. Length 25 mm
The stigmatal spots and ventral

have some minute white spots and on j's 5 to 10 there is a small black dorsal spot situated anteriorly on each segment. Joint 12 slightly swollen. Joint 13 small. Legs as before (Abd m 9, 10 & 13)

Oct 11 Spun a thin white web, drawing together leaves (or the netting) in which to pupa

Pupa Oct 13 Depressed somewhat above the wing cases at back of thorax, the eyes prominent, the tongue case projecting below the wing cases forming a rounded prominence over the abd.

seg. succeeding the wing case. The cuneus is short & blunt and the hooks with which it is furnished are fastened in the silk of the cocoon. Wing cases slightly creased. Color brownish black but paler at the joints of the parts and between the abd. joints.

Imago Oct 25

Plusia californica

Rate of growth $\frac{13}{4}$
(see cat no 3934) 143

Copied
March 3 '11

Eggs laid by larva Sept 25, 1889
Los Angeles Cal, electric light.

Eggs Sept 25 Slightly less than hemispherical, the base flat. Color dull brown-black, smooth. Diameter 1 mm

Hatch Oct 3 Head ^{dark} red brown. On joint 2 are two brown processes minutely spined. Joint 13 has two

"tails" 3 ^{broadly} mm long, brown twice, annulate with pale yellow ^{minutely spined} Body brown with 3 dorsal pale yellow patches. Venter and legs pale whitish. Length 4 ^{mm} (tail)

Rest on leaf on abd. feet, the thoracic lifted off it. Tails together, resting on leaf.

Moved Oct 6 from web spun on leaf to

Head red brown with two blackish shades in front. Processes on joint 2 ^{which is swollen}

stoutly spined. Tails twice broadly annulate with pale yellow. Body

red brown, a transverse row of minute
spined joints to each seg. the dorsal
pattles as in previous stage but the faint
one on joint 12 extends ^{ventrally} also on j. 11 ~~length~~
length (6 ^{mm} + 4 ^{mm}). Eat the whole leaf.

Venter & legs pale yellow. The outer
side threads in the tails are pale
whitish at base the rest dark brown
^{broadly} once annulate with white. They
are extended in the same manner
as a *Stipula* "brown", 'inside out'.

Nov 31 Oct 11 Head brown, densely marked
with small yellow spots, but leaving two
waved lines of the ground color in front
dorsal whitish. Head paler at the sides
posteriorly. Joint 2 is somewhat swollen
& bears two thick processes about 1 mm long
covered with ^{tubercles} ~~processes~~. Each segment has
a row of similar tubercles bearing short
fine hair. Tails 4.5 mm long & spread.
The tubercles dorsal on joints 3, 6, 7, 8, 9 & 11 are rather larger.

Body yellowish green, the red brown of
the dorsum reduced to a subdorsal
brown line which joins on the last
segment and is connected on joints
^{which} 2, 3 by brown mottlings between the
processes, by a large patch on joints
^{and joints on} 6, 7 & 8 and another on joint 11.

The large spot is paler centrally.
The tails are green, brown above at
the base and twice annulate
with brown toward the ends. Length 2 ^{mm}

Oct 11 On the subdorsal line may be
wanting and the brown dorsal
^{connected by a faint dorsal line}
patches isolated. These rows in
12. 12 mm + 5 mm

Nov 8 Oct 17 Head purple brown before
yellow green at the sides behind the
eyes, the upper $\frac{2}{3}$ densely covered with
small pale yellow spots, but leaving
two lines of the ground color in front

Palpi white. A few minute hairs on the surface. Body green with a yellow tinge at the bordering of the dorsal patches which are four in number and purple brown. The 1st on joint 2 & 3, triangular, covering the upper part of the spined process of joint 2, partly divided by a green dorsal line anteriorly; the 2nd on 5, 6, 7 & 8, 9, ^{extending down the side to the apophysis} elliptical, pointed anteriorly and connected posteriorly with the 3rd patch on joints 10 & 11 which widens posteriorly and narrows abruptly to the 4th patch on joints 12 & 13 which ^{100% of these extend to and beyond} is partly replaced by the ground color. Tails purple brown all the dorsal half above and two annulate with brown at the extremities. The dorsal patches are partly mottled with pale yellow and contain conical tubercles, each

^aHead partly retracted under joint 2, surmounted by a short hair. ²⁷The sides of the body are sprinkled with brown & white scales and have a few short fine white hairs. The tails are spined and the retractile threads black with a white ring. Body slightly elevated locally at joint 4. ^bGreater white. [A larva with 11th skin moult Oct 23. Similar s-d line less, later gone. M. Oct 30 = adult.] ^cMoult Oct 24 Head as before. * Body nearly smooth, the conical piliferous ^{hairs} elevations represented by ^{slightly} elevated spots. Process on joint 2 ^{much} ^{more} slender and without spine. Tails spined as before & marked the same. ^aDorsal patches much as before, the 2nd 3rd & 4th strongly confluent, ^{2nd 3rd & 4th more so} the former marked centrally with many dark olivaceous spots. *

(Larva - web on top leaf last stage)

with which color all the patches
are narrow by edged ^{inside the yellow border} ~~at~~ ^{yellow} ~~Body~~ ^{Body} ~~patches~~
green with a transverse row of
purple brown spots per seg, and
a number of whitish spots which
are found also on the ~~last 3 dorsal~~
patches, on the ^{anal plate} ~~anterior~~ ^{anal} patch
enlargement and replaced the
purple brown. The patch on
joint 2 ~~has~~ ^{has} yellow spots like
those on the head. ^{partly surrounded by} ~~Spine~~ ^{dark} ~~red brown~~
venter whitish ^{at maturity green} ~~purple~~ spots on the
legless segs. ^a Retractor threads
dark purplish black, once
annulate with purplish white.
Two erect spiny hairs at anus, beyond
apparent anal plate. Feet green, ^{the} ~~the~~ ^{marked} ~~the~~
~~marked~~ with brownish. At maturity
a number of yellow spots appear on
the central dorsal patches, and the

^c As they approach maturity the color
the dorsal patches fades to lilac

outline of this patch anteriorly is
irregular, retracted between the
segs. Length $(35^{mm} + 5^{mm})$ 40 mm

^d reddish ventral line on joint 12 etc.

^e Slight dorsal elevation on joint 3
posteriorly, just covered by the end
on the first dorsal patch.

Cocoon Oct 31 On a stick of silk and
bits of wood bitten off 30 mm x 13 mm

Pupa [Oct 29 Dec 9] Cylindrical, tapering
slightly at both extremities, somewhat
flattened. Color pale brown, venter
yellowish and a dark dorsal line
ringing the cases greenish. Abd.
very minutely punctured. My cases
creased. Length 18 mm Width 6 mm
Drugs, Nov 21, 1890 Cut no 46 48

Cerura cinereoides

Rate of growth $1\frac{1}{2}$
Copeid 144
190

Mutua
clove
sepalga
Zeranium
8-10

43 eggs laid on electric light carbon
Hill & 12th St. Los Angeles, Cal. Found
Oct. 26, '89. Egg spheroidal, the base
slightly more flattened than the
apex. Color ^{light} pearly ^{gray} ~~white~~, when
found showing a gray streak from
the included larva. Laid in

mass. diam. about 1 mm.
[A♀ *Arachnis picta* laid about 380 eggs
Oct. 28, 1889. Hatched Nov 14 (BB144A)]

Hatched Nov 1 Head in the center and
larva eats a hole for exit. Head
in date, black & shiny, the mouth
parts pale. A few black hairs.
Cervical spot straight in front, curved
behind, black & shiny. Body pale
dirty whitish with long black hairs
growing from 8 long hairs. Thorax & legs
black. Length 2 mm when hatched.
Eggs be 2 $\frac{2}{3}$ scale

H.B. *Adacta* will run & hide when disturbed
while *A. picta* ball up. Easiest way to
distinguish the larvae.

Later the body is greenish white, the
warts black. ① was small in subdorsal
space. ② subdorsal ③ lateral ④ anty-
matal ^{subventral} ① obsolete on 2, 3, 4 & 13 ② replaced
by cervical spot on 2 and supplemented
by a elongated spot on 13 on which
most of the others are lacking. Some of
the warts are brownish at the bases,
and subventral
forming a subdorsal brown band on the
middle segments. Legs black.

Mount Nov 12 Head as before. Body
pale whitish, the warts large and
black with brown irrorations between
the subdorsal ^{subventral} rows. Length of the body 4 mm
Thorax & legs black. Abdominal whitish.
Hair black, about 1 mm long, still pink.
Mount Nov 20 Head shiny black. Body
& warts black, a white dorsal line
and pale stigmatal band. Hairs
black, white from subventral warts.
Eats whole leaf. Length 6 mm.

Moult June 27 Head condate, black & shiny with a few short black hairs. a pale line above the mouth, concolorous with base of palps. Body & warts black, a narrow dull whitish dorsal line. Hair bristles & black, paler from the subventral warts. Feet & legs black, claspers of abdominal palps. Length ⁹ 18 mm after moult.

Nov 4 Dec 4 Head as before. Body black.
dorsal line whitish narrow and faint.

[illegible]

Copied
Apr 23 90
written
Dec 18 90

145

Spring drowned in irrigating ditch
Phoenix, Arizona, Nov 15, 1889. Probably
on ^{cotton} ~~peas~~. Head subtriangular
green with many rather large white
elevated spots, the front nearly
all ^{pale} yellowish white but it
has a purplish shade centrally
at the antures and the ^{triangular} ~~angular~~
plate above the mouth is pale green
smooth parts ^{dully} white but the jaws
black on the inside. Cervical spot
and anal plate same as angles of
the head, the two ^{lateral} lower plates tinged
with yellowish posteriorly. The
upper does not quite reach the
^{lateral} lower ones at the sides, leaving
some of the skin of the body between.
Body green with a purplish shade
on the dorsum (supratine) and 7

interrupted between the segments
oblique lateral lines, the first
and sixth fainter than the
others and sometimes almost
absent. The last is broad
and distinct and extends
from above base of leg on joint 10
to the caudal horn which is short
concolorous with it, ^{is nearly the} ~~the~~ ^{tip} ~~black~~ ^{greenish white}
The lines are not well defined
at their edges, the outline being
somewhat irregular and blended.
Spines yellow brown the central
white, ^{the one on joint 2 is all white}
Thoracic feet white,
purplish at the tips with fine
brown hair internally; abdominal
green, purple externally above
the claspers, then gradually white
and above this another slight
purple shade. Venter centrally
slightly & interruptedly paler.

Each segment has about six
transverse creases or annulets.
Length of larva 80-90 mm. Length
horn 3-4 mm. Width of head at
base nearly 7 mm, height 8 mm.
Diameter of body 15-17 mm.

Pupa Red brown. Robust, of usual
shape. Cremaster short and rounded
terminating gradually in a single point.
Body segs. coarsely punctured, wing
cases granulated.

Imago Jan 12, '90. Cat no 4508

Triptogoni occidentalis
var. *f. modesta*.

Triptogon imperator, Stål.

146

Micro larva on ^{cottonwood} ~~poplar~~, Phoenix
Arizona, Nov 15, 1889. Spin together
closely their surfaces touching the
leaves & poplar & "punk" inside.
Head pale whitish, green in
front with two black spots on
each side. Jaws brown. Body
slender, last two segments tapering
whitish green with a few short
pale hairs. Thoracic feet tipped
with black, Cerebral spot large
& green, covering the whole of the
top of joint 2. (Very numerous at
Phoenix) with a black spot below
it. Spin a little white silken web
between the leaves and turn to light
brown pupa, abd segs. tapering, last rounded
with no cremaster. Segs very slightly
coarsely punctured & wing cases creased.

147 *Phasianae irrorata*

^{Cottonwood}
~~Looper on poplar~~ Phoenix Arizona
 Nov 16, 1887. Head round, green with
 a yellowish line behind the eyes
 eyes black, palpi pale. Body cylind-
 rical, abdominal legs on joints 10
 and 13. Color green (with a few short
 fine black hairs visible with a glass)
 longitudinally finely striated
 with yellowish on dorsum and
 venter and a stigmatal yellow
 band at which the skin is some-
 what folded. This band is con-
 tinued into the last pair of legs
 and joins the line on the head
 Feet green, the tips brownish.
 Cocoon in leaf, thin & thread.

Pupa Brown, abd gently tapering, joint
 W-case slightly creased. Crem. legs tapering
 & ending in 2 divergent points.
 Larva Dec 23 Cut no 4342

148

^{Cottonwood}
Hyphantia on ~~poplar~~, Phoenix Arizona
 Nov 19, '87. Spin web as *H. curvata*

^{terminal spot black}
 Before last moult? Head ~~red~~ black. Body
 dark gray, with dorsal & subdorsal
^{yellowish} white stripe, ^{subventral} stigmatal stripe fainter
 and body at the sides paler than is
^{more mottled with yellowish white}
 subdorsal space, warts reddish or black
 hairs white & few. Legs black 18mm

Moult Nov 19 Head shiny brownish red,
 a black shade in front above the
 mouth white a line over the mouth
^{open short hairs on the lower part}
 and the base of the palpi are white

Body black, slightly mottled with
 yellowish, more at the sides, giving
 a gray appearance. Dorsal, subdorsal
^(in subventral space)
 and subventral lines pale yellow
^{the latter wavy}
 and interrupted, warts ① a small

row next dorsal line situated on the
 only joint 5-12, ② row above subdorsal

line ③ superstigmatal row ④ sub-
stigmatal, both obsolete on 13 ⑤
and ⑥ subventral rows, only one row
on joints 2-4 and 13. Warts dark
orange, hairs long thin, white
and brownish, ^{scarcely} ~~stagnant~~ 10 mm
Venter black, without warts, spiracles
white. Anterior portion of joint 2 is
bordered with orange. Length 30 mm
On joint 13, ③ ⑤ & ⑥ are coalesced in one large
spot ⑤ is present and ⑥ slight on 12 & 13
Do not spin a web at this stage.

Nov 29 Web between leaves with the
larva. Web rather thin.
Pupa mahogany red. Resembles *H. cunea*
Ald. contracted at end of wing cases &
thence rounding to cremaster which is
flat transversely with a row of 6 or 8 hooks.
Ald. segs. minutely punctured, wing cases
creased. Imago Nov 90 *H. cunea*

Copied
6/5/90

149

On willow in average Salt River Phoenix
Arizona Nov 28, 1889. Larva pinkish all
last stage maturing Body flattened
wider than ^{high} tapering only very slightly
to the extremities. Head small, pale
testaceous with brownish marks at the
sides and the eyes black, whitish above
the mouth. Body pinkish, an inter-
rupted dorsal and waved subdorsal
line, a bisected dark cervical spot
and brown shades on 5, 6, 7, 10 posteriorly
on 11, 12 & 13 ant. fused to s-d line and
partly connected with the dorsal. ^{slight shades on} seg

Body has 3 rows of piliferous warts ① in
s-d space ② below s-d line 3 substigmatal
① & ② are brownish & bear short hairs
while ③ is orange & bears long ^{whitish} hairs
Spiracles black. Subventral space pink
Venter whitish and smooth. L. 10 mm.

① The larva has only 14 feet, the pair on joint 7 being gone (Feet on 2, 3, 4, 8, 9, 10, 13)

Young Head whitish with a few hairs and 2 large black spots. Body pale greenish white marked as in previous desc. but markings are darker and there are irregularly shaped pale brown spots on dorsal joint 3 & 4. Cervical spot pale. Nails concolorous with markings in which they are situated, brown above pale whitish. Hairs pale. L. 6 mm
cocoon elliptical ^{not strong white & opaque} & a few bits of wood
extending 8 mm x 3 mm Pupa light brown, pilose, abd. segs tapering the last rounded. In overwinter
Lueyo Dec 23 (Cat. no. 4343-4)

Viola hibernica, Str.

150

Looper on willow Arroyo salt river
Phoenix A.T. Nov 29, '89 Head white with slight brown marks the most distinct being a transverse ^{interrupted} band above the middle of head. Eyes brown, jaws brownish. A few short fine hairs. Body has the skin somewhat wrinkled especially at the sides and is nearly uniform dirty white, a few fine short blackish hairs being distinguishable with a lens. Length 25 mm
Entered ground Dec 6 and spun slight web.
(Dehennemontz)

Worms on willows Arroyo Salto Rio Pinar
 A.T. Nov 27, 1889. Head semitransparent
 pale yellowish white, jaws brown, eyes
 black. Cervical spot covering the whole
 of joint 2 above the spiracles, encloses
 with head but white antennae
 joint 2, brown below it. Body greenish
 white with a geminate dorsal,
 subdorsal, stigmatal & subventral
 powdery brown lines, the stig.
 most distinct and the subventral
 faint and more interrupted. Lines
 nearly obsolete on joint 13. Body
 has a distinct substigmatal fold
 and a few fine short white hairs
 Length 12 mm Spins together the leaves

Eacles imperialis on live oak, Melbourne
 Indian River, Fla. Dec. 19, 1889. Head brownish
 testaceous shading pale on the lower half.
 Two brown ^{black} marks in front on each side
 of the central suture, ^{interrupted at base of triangular plate} diverging basally,
 a similar wider line on sides of head
 crossing the eyes. A few short white hairs
 Cervical spot pale testaceous with 4 gran-
 ulated short processes on antec. edge and
 hairy. Anal plate ochre yellow, strongly
 granulated & elevated at the edges
 the upper brown centrally, the lower
 black except the granulations. Body
 furnished with many granulated
 processes resembling short horns of a
 dark ochre yellow color in sub.d. supra
 stig. & 2 subventral rows ^{the latter small} three on joints
 3 & 4 being longest esp. the subdorsal ones
 while joint 12 has one long one, dorsal

Other slender ones occur about the
springs and on venters. Body has
many long dark hair and short
pale ones. Spinacles on joint 5, 2, 5-12
yellow & surrounded by a dark
shade except the one on joint 2.
Color of body yellow brown, with
a pink shade on dorsum esp. on
joints 3 & 4. Venter darker. Thorax
faded ochre brownish hairy. Clasper &
abd. feet ^{coarsely} black. L. 75 mm.

An obscure dark dorsal shade
shows between the segments.
Another Central Park, N.Y. Oct 6, 90. Hd high
triangular, rounded, flattened in front, abso-
lutely oblique; clypeus small, slightly
laterally indented. Hd green, dark yellow
bet the black bands in front. Lateral
band obsolete for its superior half. Mouth
parts, the feet, lower part of abd. feet dorsals
& hood dorsals to all anal plates dark
yellow. Whd 48 mm. Body fine deep green
darker ventrally, clasper & abd feet
black, as are anal plates centrally
except the granulations. L 70 mm

153

Edema or deciduous oak, Melbourne
Fla. Dec. 19, '89. Head much larger than
joint 2, shiny orange red, paler in the
lower part. A few hair seen by lens.
Body smooth & shiny with a few short
hairs. On joint 12 a transverse fold
forming a hump on dorsum, orange.
All feet & anal plates also orange.
A sub-d. & stig. yellow band the
former partly replaced by white and
the latter by orange. Body pale
purplish, 4 narrow slightly wavy
lines of ground color ^{in 3-d. space} bet. 2-d lines
separated by black somewhat inter-
ruptedly. Same ^{in stig. space} bet. 2-d & 3-d but
the black as much broken up &
replaced by ground color making
the lines complete. A black line centrally is most distinct
on subventral space similar to those in other species.

13 the black is much broken up, the ground color is nearly white and the sub-d. line is obsolete. Vents orange, whitish centrally with a fine black line. L. ad. 25^{mm}
Nov 21 Dec 21 Same, but ground color is a pale blue, and lining on 12 is darker orange, more like head. Anal feet elevated when not walking. Toward maturity the markings of dorsal space between segs. are obscured by a purplish flush & s-d. line has little tinges of orange. L. 35^{mm} at maturity 40^{mm}. The subdorsal line does not go on joint 2. The black of s-d space is much broken up, giving the appearance of many lines. Nov 30 as in *Edema albifrons*. Images Feb 25 '90 Cat no 4608

Edema

Copied in common
larva broke 7/24/90

mm
4/90
Euphorbia
syriaca

154
 Larva on red-pear
 leaf, Palm Beach, Fla. Dec 21, 1899.
 Head irregularly black in front,
 brown on the sides & vertex, mouth
 parts & palpi reddish. Warts as
 the arctiids (see 88148) with
 the small ones on legless segments,
 brownish on the black hairs but
 the sub-stage & sub-
 ventral ones on the joint 6. Body
 black with a transverse
 vermilion stripe between each
 segment when the body is con-
 tracted. Head reddish. Spiracles
 (5mm) Subventral
 spots black brown.
 Subventral spots yellow
 in front, curved behind.
 Head of dorsal
 segments.

♂ does not have
last stage E,
but would be D
if a newly hatched
larva.

of about
the wing feathers
are yellowish base
between abt. age 2
abundant and increased

Length pupa about 33 mm
Feb 4 1901

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man



{ Or head yellowish to light brown
to those where body is pale, pinkish
dorsally, bluish ventrally, shaded same
more pronounced above subdorsal
line, converging on joint 3 and
forming continuation of the line
of the head. This line also covers
on j. 12 & ends at the horns.
A series of black shady spots on
joints 5-11 inc. anteriorly dorsal
laterally & especially in patches
bet. segs super-stigmatal the
yellowish spots are paler and
enlarged, some partly confluent,
giving the body a pale appearance
at the same time the black lines
are finer and more diffuse.
The dorsum of joint 2 imitates the
marking of the head, having
a dorsal line, & the s-d space
filled in with a dull olive
shading below it. It has a
broad white band. Joint 3 is

When disturbed the larva draws
down its head and shows the marks
and knicks in ^{head} body violently from
side to side.

suffused over the dorsum with
 a nearly uniform purplish flush
 but the markings reappear on
 the posterior part widened and
 above diffuse, and end on the
 fold on ^{pale in fold of 13} inst. part of 4, which
 has nearly concealed a solid black
 spot, fringed by a narrow blue line
 surrounded by a white ring and
 this nearly enclosed by an olive
 brown shade replaced by pinkish to
^{3-4 line} white pale, black marks nearly
 lost. Thor. feet white with 3
 black rings. ^{See in 10 larger than 7-9} Abdomen joints 7-10
 as follows. Base white; then broad
 velvety black stripe; then powdery
 blue stripe; a yellowish one
 edged by narrow blackish line, ^{ext.}
 a white band followed by a black line and the
 broad olive gray band, and
 claspers white. Anal feet
 unornamented, the plates
 yellowish gray with rather few

Horn pale yellow, reddish at
 base, imbricated, above the
 scales brown. Length 6 mm.
 Cervical shield 6 small plates
 pale green with small white
 clouded spots. On following
 ant. each joint 3 or 4 small
 shade and small partly
 concealed in food on ant. joint
 had 20 joints. Length of a black
 spot with white central
 line, surrounded by broad
 white ring and bordered thin
 a reddish pink allude to
 a-d line, shaded white
 wave to central black band
 Abdominal plates
 terminate with black, abd.
 but except last pair pale
 reddish with black band
 blackish brown. Length 34 mm.
 which is very nearly white
 and dorsal faintly by
 the 7 and 8th alar.
 Enter the feet joints 7-10 become
 nearly as in last stage but
 lower white band is added
 and orange band one
 replaced by dusky color
 distinct white brown line.
 Molt 5 chs. Freshwater. At
 1742, Dec. 17, 1911.

Rest under thro, on the upper part.
March 26 Head & crown marked as
 before but very minutely dotted with

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pupa Feb 14 of similar shape to pupa of BB1614
 but much more robust and less lively.
 marked after the same pattern in
 black and red brown but the black
 is very extensive covering nearly the
 whole pupa. Color black, very shiny
 marked obscurely with red brown on
 the veins of the wing cases and on the
 leg cases. A curved line at back part
 of thorax, and more distinctly with
 a wavy narrow band around each
 of the anterior abdominal segments.
 Body punctured bet segs. Wing cases ^{8th} thorax
~~obscurely~~ creased. Gernates flat
 somewhat rounding above & below
 s-d. broad at base and tapering evenly
 to the point; densely punctured.
 Length pupa 55 mm. width 13 mm
 Imago March 13 Cat no 4646

Dilephnosta elto
 (Collected at St Augustine)
 (Nat Mus)
 (JBS mmo)

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Laid
 Dec 31, 10:15 a.m.
 Hatched Jan 2, 8:15 a.m.

156

Pile of 4 eggs laid by *Eudarnis proteus*
 on back of leaf of yellow flower bean
 vine, Palm Beach, Fla. Dec 22, 1889.
 Eggs irregularly spherical, the upper
 $\frac{3}{4}$ with 11 vertical ridges running
 to an elevated ring that surrounds
 the summit. ^{Pale yellow} Lower half yellow
 upper black (in larva) Diam. 9 mm
 Hatched Dec 23 Head much larger than
 any other joint, slightly notched at
 summit, dark brownish black. Joint
 2 above concolorous with head. Body
 yellow, more greenish on dorsum. L. 2.5 mm
 after a day they had eaten 2 bits
 on the side of the leaf & bent over the
 portion between securing it by threads
 R. 4 under this, on the upper part.
 More Dec 26 Head a conical mark as
 before but very minutely dotted with

yellow. Body greenish yellow, densely covered by small yellow granulations. a dorsal greenish line & subdorsal yellow one, both absent on joint 13

Built second house Dec 27

Moult Dec 31 Head brown black, roughened with many minute points. Cervical spot on upper half of joint 2. concolor but smooth Body yellowish green, thickly dotted with yellow & yellow subdorsal line, but leaving darker dorsal line

Joint 12 tinged with orange, and joint 13 anal plate unornamented. L. 7 mm

Built third house Jan 1. 1890.

Moult Jan 4 Head dark brown, minutely punctured. A large quadrate orange patch between eyes & jaws. Cervical spot shiny brown black; the rest of joint orange. Body dark green, thickly covered with small yellow spots, but leaving

dark dorsal line and obscure sub-stigmatal. A distinct even yellow subdorsal band, becoming diffuse and orange at joint 12 & 13 and becoming anal plate. Subventral fold

perianth center with white spots. The anal plate small. Abdominal fur pale orange, slightly darker in front. Head large, little depressed at top. Antennae apically granulated.

Black for the most part above, the quadrate orange red spots before eyes, connected narrowly with the dorsal portion. Joint 2 black above, nearly white below. Body flattened at joint 13, pale green, thickly covered over dorsum with many small black and yellow spots, only black ones in the space between eyes & jaws. Basally black dorsal line, yellow subdorsal band, orange anal plate. White

green band in a dorsal spot. Spiracles dark punctate. The feet black. Ant. 2 segs and outwardly. 230 mm. Joint 27 in second moult held by 2nd & 3rd segs. 1st seg with white silk with thread around it. (Cremaster in thread)

13 and 14. 1st seg of anal plate. White green band in a dorsal spot. Spiracles dark punctate. The feet black. Ant. 2 segs and outwardly. 230 mm. Joint 27 in second moult held by 2nd & 3rd segs. 1st seg with white silk with thread around it. (Cremaster in thread)

157

Egg of *Pieris monista*? on pepper grass
Dec. 23, '89 Egg spindle shape, 9 vertical
ribs, coarsening at summit. yellow.

on upper surface of leaf. Height abt. 1.2 mm
Another got Dec 30, hatched Jan 3.

Head round, pale yellowish between
eyes & mouth brown. Body pale yellow
with fine black hair, longest at
the extremities. Eat egg shell. $2\frac{1}{2}$ mm

Before last moult? Head with many
elevated black spots bearing white hair.
Cervical spot black, bristled, covered by
black conical piliferous tubercles. Body
has dorsal, subd. and stig. yellow
bands; the a-d spaces are yellow green
the stigmatal space pale blue, venter
dull green. Joints 3-13 have a row of large
black elevated spots in a-d space, and
a similar row in upper part of stig. space

doubled in joints 3 & 4. These bear each
a short black hair. Body is covered by
numerous small piliferous black dots.
Spiracles black. Length 18 mm

Moult Jan 12 Head dull yellow, a
brighter patch before the eyes. Covered by
many elevated black spots bearing hair.
Thoracic feet tipped with black. Spots
in rows are conical tubercles. Otherwise
same as preceding. Length 25 mm
Suspended Jan 15 (Pupa smashed)

Probably *Pieris monista*

BB154 chuk

♀ BB154 out Feb 4 '90 mated night of Feb 4-5, laid eggs evening Feb. 6 about 400 (in acc 22/4) finished night 10-11

Egg nearly spherical, base a little flattened, minutely punctured. Color yellowish pearly gray. Diam. 8 mm

Hatched Feb 18 Head light brown, paler infra. Eyes large black. Warts 5 mm Body pale whitish except joints 5, 6, 9, 10 & 11 which are light brown. Warts concolorous, hair black. Length 2 mm

Molt Feb 23 Head nearly colorless, tinged with brown. Eyes large black. Warts brown. W. 6 mm. Body same as head but not shiny, tinged with reddish brown. Warts 10 from joints 5, 6, 9, 10 & 11 black. Hair black. Length 3 mm

Molt Feb 26 Head .8 mm. 9 mm. semi-transparent pale brownish, a little reddish, eyes black. Cervical spot, 2 legs same color. Body light reddish brown. Dorsal white in j. 4

joints 5 & 6 all around & 8, 9, 10 & 11 in s-d space black. A white dorsal line. Hair bristly black. L 5 mm

Molt (March) Head 1.2 mm pale brownish shiny. Warts pale. Eyes black. Body red orange. Joints 5, 6 and 9, 10 & 11 black (latter s-d). Warts black. Dorsal line slightly paler than body. Hair black, bristly. Length 9 mm - 15 mm

Molt week 7 Hd 2 mm = A nearly. Length 18 mm Hair appears pale on dorsum on joints 7, 8, 9.

(dead)

The supposed ♂ pupa came out ♀ and this description needs more observations.

line. darker chuk at vertex

Saw *D. chamenerii* in Devin cot.
July 23, '89

